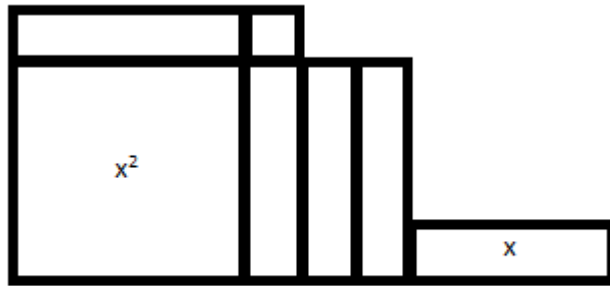


Name:

Algebra 1 Mid-Term Review

1. For the following figure write the area as a sum, then find the perimeter.



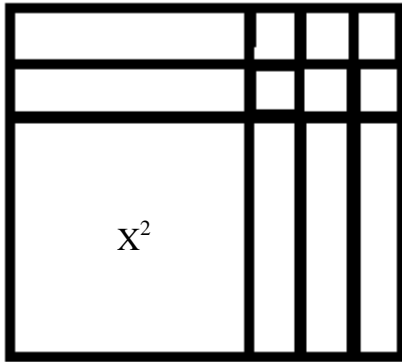
Area =

Perimeter =

2. Jane is stacking bowls and notices that 1 bowl is 2 inches high but when she stacks 5 bowls the stack is 5 inches high

- Make a $x \rightarrow y$ table for the given information.
 - Write an equation that describes the pattern of the height of the bowls
 - What would the height of the bowls be if she stacked 32 bowls.
3. What determines if a set of data can be represented by the equation $y = mx + b$.
4. If a line started at:
- the point $(0, -3)$ and has a slope of $-\frac{1}{5}$, what is the equation of the line?
 - the point $(6, -1)$ and has a slope of $\frac{1}{3}$, what is the equation of the line?

5. For the following figure :



a. Write the area as a product.

b. Write the area as a sum.

c. Write an expression that represents the perimeter.

6. For the following figure find the Area and the perimeter. Note some areas and lengths have already been labeled for you.

Area =

		12
2	24	
3		9

Perimeter =

7. When determining the equation of the line that passes through the points (22, -14) and (-6, 10), Shannon calculated the slope to be $\frac{1}{7}$. Did she calculate the slope correctly? If so, what is the equation of the line? If not, what did she do wrong? Explain completely.

8. The figures below show progressively larger arrangements of squares.

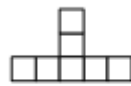


Figure 2



Figure 3

- a. Complete the table below.

x (Figure Number)	0	1	2	3	4	5	6
y (Number of Squares)							

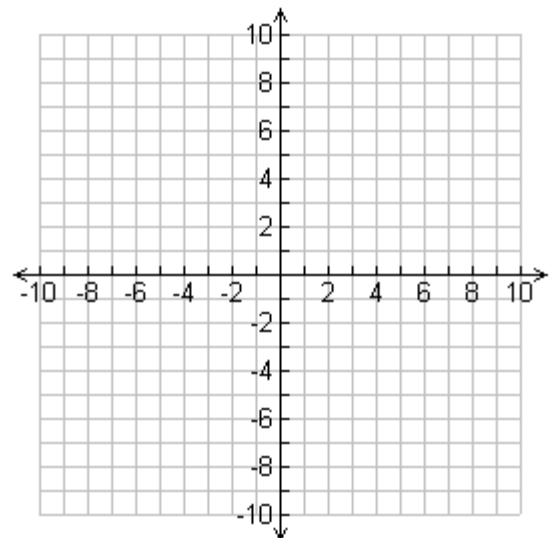
- b. Find as many patterns as you can in the table you completed.
- c. Where do the patterns in your t -table appear in the Figures above? Show and explain your answers.
- d. How many squares would be in Figure 100? Explain how you know.
- e. Write an algebraic rule to show the relationship between y (the number of squares) and x (the figure number).

9. Graph each of the following situations on the coordinate plane provided.

a. $y = \frac{-1}{2}x - 4$

- b. Figure 0 has 2 tiles and increases
3 tiles every 2 figures.

- c. A line passes through the origin with
a slope of $\frac{1}{5}$



10. Read the information below about several lines. If there is enough information to draw a graph and find a rule, write “enough information” and find the rule. If there is not enough information, tell what you would need to find a rule.

- a. Line A has a slope of -2 and a y -intercept of 4 .
- b. Line B passes through the point $(2, 2)$.
- c. Line C passes through the origin and has a slope of -7 .
- d. Line D is parallel to the line $y = -5$.
- e. Line E passes through the points $(-4, -1)$ and $(1, 21)$.
- f. Line F passes through the point $(4, 2)$ and is parallel to the y -axis.

11. **Multiple Choice:** The student leaders want to have a party at the end of the year, but they are worried about the cost. They currently only have \$75 in their account, and realize they will need to have \$350 in five weeks to have the party. Which equation would allow them to calculate x , the amount of money they will need to raise each week to reach their goal?

- A. $350 = 75 - 5x$
- B. $350x = 75 + 5x$
- C. $350 = 75x + 5$
- D. $350 = 75 + 5x$

12. Consider the line containing the points $(-1, 3)$ and $(4, 6)$.

- Find the slope of the line.
- Find the y -intercept.
- Find another point on the line that has integer coordinates. Write the coordinates of the point you found.
- Write an equation for the line.

13. Study the tile pattern below.



Figure 1

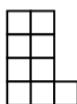


Figure 2

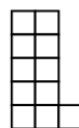
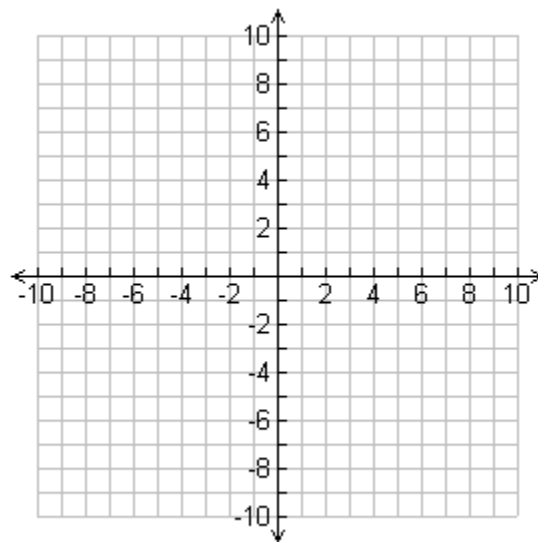


Figure 3

- Make an $x \rightarrow y$ table comparing the figure number and the total number of tiles in each of the tile figures.

- Use the $x \rightarrow y$ table to graph the pattern.



- Explain how the growth pattern in the figures is connected to the numbers in the table and the line that you graphed.